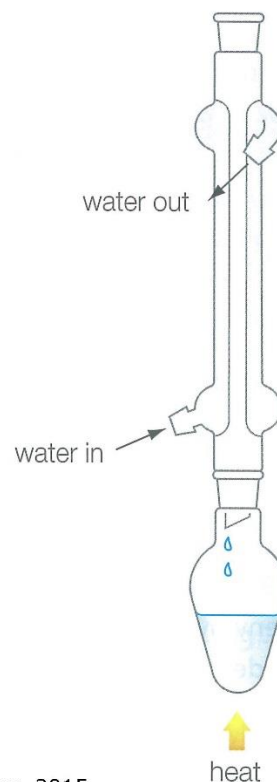
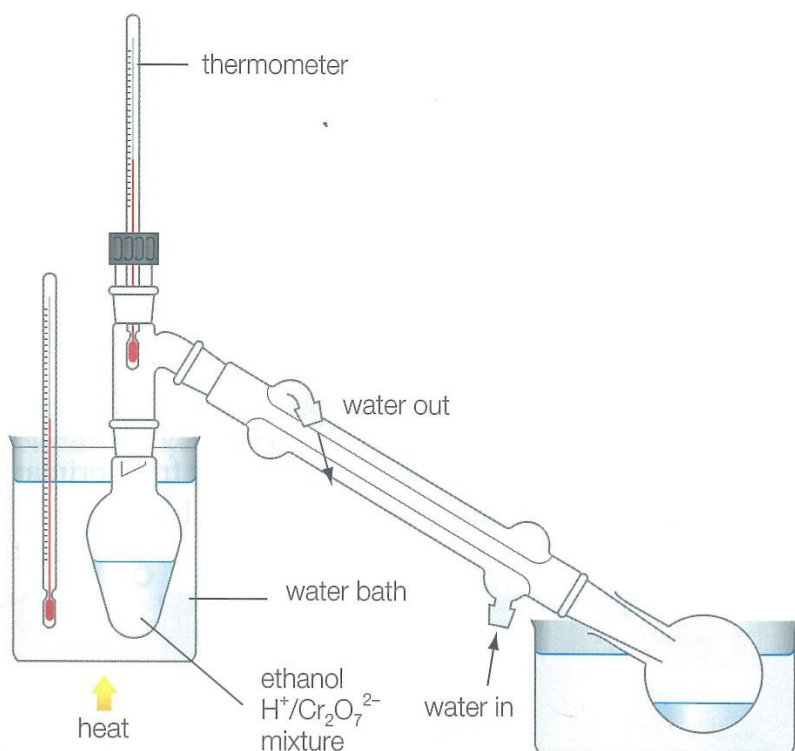


## Making aldehydes, carboxylic acids and ketones



Talbot C, Harwood R, Coates C, *Chemistry*, Hodder Education, 2015

### partial oxidation using distillation

ethanol (primary alcohol) forms aldehyde: ethanal (bp of 21°C)

### total oxidation using reflux

ethanol (primary alcohol) forms carboxylic acid: ethanoic acid (bp of 120°C)

### oxidation of secondary alcohol

propan-2-ol forms a ketone: propanone (bp of 56°C)

#### **distillation**

- product is condensed and collected as soon as it forms
- important in the case of forming an aldehyde to prevent further oxidation to a carboxylic acid

#### **reflux**

- maintains the boiling point of the reactant, ensuring maximum rate of reaction
- no loss of product as vapours condense and fall back into the pear shaped flask